



The Aeronautical Newsletter of the
Seattle Flight Standards District Office

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Renton, WA 98055
www.faa.gov/fsdo/seafsdo/

SELECT No. NM01FS10

May - June 2000

WINGS WEEKEND

For those looking for a convenient way to earn their Pilot Proficiency Awards Program WINGS, we are pleased to announce that the Paine Field chapter of the Washington Pilots Association will host a WINGS Weekend at Paine Field April 29 and 30, 2000. The event will offer free seminars and three free hours of refresher flight training (you provide the airplane). You can show up in the morning, take advantage of the training, and wear your Wings home in the afternoon.

Since the scheduling of pilots and instructors is critical, you must pre-register to participate, Contact BJ or Steve Brandli at 425-895-1587. If you are a CFI and willing to help, please call too.

Also, WINGS will happen at Arlington on Saturday May 13. Contact Justin Hall at 360-435-8554

Pilots participating **MUST** be qualified and current in the aircraft because **YOU WILL BE THE PILOT IN COMMAND AND THE INSTRUCTORS WILL NOT.** The instructors have volunteered their time and are prepared to receive no com-

pensation what so ever. We urge you to consider tipping your instructor.

CROP CIRCLES by Scott Gardiner

A couple of fairly recent accidents remind us that there are some things about takeoff planning that we should discuss once in a while. We won't know the probable causes of the accidents for quite some time yet, and these comments do not necessarily apply to the recent accidents. The only connection is that the recent accidents remind us that we haven't discussed this stuff recently and we should.

When accident investigators first arrive on the accident scene, one of the first things that catches their eye is the manner in which the wreckage is laid out. It will generally fall into one of two categories. The first is where all of the wreckage is contained in a small circular space, the diameter of the circle being roughly equal to the wingspan of the airplane. This is classic in the cases where the airplane stalled and fell virtually vertically to the ground. In these types of accidents, there are seldom any survivors.

The second category is where the wreckage is strewn out over a

considerable distance as the airplane more or less slides to a stop. This is common in accidents where the pilots flew the airplane as long as possible and went into the ground under some semblance of control. In these cases, we might find a broken rotating beacon first, then a broken wing tip, a little further on maybe a landing gear, than pieces of the tail, some miscellaneous pieces, then maybe a torn sectional chart, then larger and larger pieces, then finally the majority of the forward fuselage packed in a heap. It is common to see the landing gear ripped off, the wings buckled, the fuselage cracked open behind the baggage compartment, the tail section twisted forward about 120 degrees where it stopped when the tip of the horizontal stabilizer hit the side of the fuselage. The engine might very well be twisted sideways and rotated down but still attached to the engine mounts, and the propeller contorted in a difficult to recognize twisted mess. The truly amazing thing about these wrecks is that the area where the people sit is generally in remarkably good condition, considering what it has just been through.

It makes good sense though, once you think about it. The landing gear, the wings, the en-

gine, and the belly of the airplane generally hit different things at different times, slowing the airplane in stages, allowing the momentum to dissipate a little at a time (relatively) rather than all at once. That, combined with some excellent “roll cage” engineering, generally leave the area where the people sit remarkably well intact. In these kinds of accidents, the occupants stand a good chance of surviving.

Which brings up the question which has been around ever since 1903. What should pilots do if the engine should quit shortly after takeoff? The obvious answer to us is - get the nose down quick and return to Earth under some semblance of control. Above all else we must keep the airplane flying as long as possible. If you have attained sufficient altitude and are in position to make a 180 degree turn and return to the airport, fine. If you have not attained sufficient altitude to return to the airport, you **MUST** at least avoid a stall and keep the airplane flying as long as possible. It is far preferable to scatter airplane parts in a trail of wreckage, then to confine it to a small circle.

Pilots hangar fly about just how much altitude does it take to return for a landing. The answer is different for just about every situation. But here are some things to think about. According to a test pilot friend of mine, in most single engine light airplanes climbing at best rate of climb speed, if the engine quits and the pilot maintains the best rate of climb attitude, the airplane will slow down 4 to 5

knots per second. I’ve never measured it, but it sounds about right. Most light single engine general aviation airplanes have a best rate of climb speed about 20 knots above stall speed (assuming a best case, wings level scenario). That means that the first 4 seconds after power loss are critical. If you don’t get the nose down within the first 4 seconds, you’re going to make a circle!

Remember too, that if pilots have not been thinking about this situation recently, have not had some refresher training on the subject (at a safe altitude) recently, and have not been planning for the possibility during the takeoff and climb out, there is a denial period during which the brain is swimming in molasses. In the cockpit it sounds something like, “Oh spit, I don’t believe it” (1 second), “This can’t really be happening to me” (2 seconds), “Engines don’t just quit like that” (3 seconds), “Oh well, lets see just what are my options anyway?” (4 seconds) - too late, it’s over. If you have not got the nose down by this time, it will go down (waaaay down!!!) all by itself. The engine out scenario is something pilots have to be thinking about before and during every takeoff. We must be thinking about it before it happens, because if it does actually happen, time is too precious to waste.

That same flight test says that a **BIG** mistake which pilots in this situation often make is to try to save the airplane. Airplane owners are so proud of their birds that they couldn’t bear to see it scratched. Owners of airplanes

which they have built themselves are particularly protective of their pride and joy. Pilots of rental airplanes would be too embarrassed to return the airplane with even the smallest little part damaged. This attitude can be a killer!!! What they really need to remember is that the airplane is expendable. We need a mind set that the airplane has failed us, and therefore it deserves anything it gets! Scatter it’s parts over a long track and come to a stop with the area where the people sit remarkably well in tact. He should know. He has ridden through 4 actual crash landings, and 6 off-airport forced landings, during his flight test career. He says fly (control) the airplane as long as possible. Make sure the seat belts and shoulder harnesses are tight. Go into the ground in some semblance of control. Then hang on and enjoy the “E” ticket ride. And don’t worry about damage to the airplane.

OK. Let’s say you got the nose down right away, and your airplane is gliding at best glide speed. Now what? At some altitude, you’ve got a chance to turn around and return to the airport. Be careful!!! This is where an attempt to save the airplane can be fatal! It might be better to just go straight ahead into whatever awaits. Remember, the airplane failed you, and it deserves anything it gets! If you go straight ahead, under control, the odds are you and any passengers will survive, even though the airplane might be destroyed.

To help you with this turn around decision, we suggest a little rehearsal. Take your favor-

ite airplane up to a safe altitude out in the practice area. Set up a takeoff situation - full takeoff power, climbing at best rate of climb airspeed. Pick some upcoming altitude and tell yourself that you will get an engine failure when you reach that altitude. When you get to that altitude, retard the throttle to idle, lower the nose and execute a course reversal. Remember that a 180 turn is not enough. A 180 will leave you parallel to, but displaced from, the extended centerline of the runway you just left. So your turn has got to be more like 220 degrees. After your 220 degree turn fly wings level for a few seconds to simulate flying back to the extended centerline, then turn back 40 degrees in the opposite direction. Now wings level for a few more seconds, then flare and (simulated) touchdown.

How much altitude did all that take? You probably should add a few hundred feet more for indecision and nervous mistakes you will likely make if the situation were real and real close to the ground. That is how much altitude you must reach after takeoff in order to even consider turning back if the situation actually happened. We're thinking it will be in the neighborhood of 1,000 to 1,200 feet. Actual tests on a Beech F-33A, with no delay after simulated engine failure, required 800 feet. Conclusion - you should probably not consider turning back to the runway unless you have already completed your crosswind turn.

On takeoff, if your engine should fail below your Magic Altitude, the only logical conclusion in-

cludes landing somewhere other than the departure runway. Your mindset has got to be, "The airplane failed me, and it deserves what ever it gets!" Be prepared to sacrifice the airplane. Keep it under control as long as possible, then enjoy the ride. In all probability, the area where the people sit will be remarkably well intact.

The toughest decision of all is when the engine quits below your Magic Altitude and the entire area is covered with congestion. Maybe your only choice is a school yard, and it's recess, and 550 kids are filling the playground. That's a real tough one. We honestly hope you never have to face it. But it's times like this when pre-thinking the situation before it actually happens can pay big benefits.

WEAVING A WEB

Have you visited the Seattle FSDO Home Page recently? The address is:

www.faa.gov/fsdo/seafsd
and we think there is a lot of stuff there you might very well be interested in.

For example, all of our upcoming seminar flyers are on the Home Page approximately 2 weeks before they show up in your mail box. Same way with AeroSafe - you can read it on the Home Page two weeks before it shows up in your mailbox. Also, past issues.

Are you looking for a Designated Pilot Examiner for an upcoming check ride? All of our Examiners are listed on the Home Page with their locations

and phone numbers. Looking for an Aviation Medical Examiner in your area for your next flight physical? They are all listed on the Home Page along with locations and phone numbers.

A and P information, Designated Airworthiness Representatives, Designated Mechanic Examiners, Repair Stations, and information regarding GPS Field Approvals are all available on the Home Page.

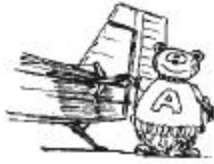
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